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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,213	06/22/2001	Yuji Matsuyama	210029US3DIV	7008

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EXAMINER

JOLLEY, KIRSTEN

ART UNIT

PAPER NUMBER

1762

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/886,213	MATSUYAMA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kirsten Crockford Jolley	1762	

**- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -**

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_ .

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-8 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. 09/272,782.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)  Notice of Informal Patent Application (PTO-152)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, lines 2 and 5, the terms "high" and "low", respectively, are vague and indefinite because they are relative terms of degree and the metes and bounds of the claim are unclear and do not appear to be defined in the specification. Similarly, in claim 5, line 3, the term "low" is vague and indefinite for the same reasons.

Claim 6 recites the limitation "the air" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the air" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Knapczyk (US 4,590,101) or Morita et al. (US 4,839,232) or Nakano et al. (US 6,423,651).

Knapczyk teaches a method of heat-treating a coated substrate in an anaerobic atmosphere of inert nitrogen (see col. 5, line 26 to col. 6, line 9 and Example 14). Morita et al. teaches heat treating a coated substrate in an atmosphere comprising an inert gas (col. 5, line 39 to col. 6, line 10). Nakano et al. similarly teaches heating a coated substrate in an inert atmosphere (col. 7, line 63 to col. 8, line 3). Providing an inert atmosphere inherently controls the gas concentration of an atmosphere.

#### ***Claim Rejections - 35 USC § 102/103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in–  
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 2-8 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakano et al. (US 6,423,651).

Nakano et al. discloses a process of heat treating a coated substrate comprising the steps of: mounting a substrate on a spin coating; coating the substrate by spin coating; allowing it to stand in ambient air atmosphere so that the solvent volatilizes; and heating the substrate in nitrogen flow at about 400 degrees C (col. 7, line 49 to col. 8, line 3).

Nakano et al. lacks a specific teaching that the replacement of ambient atmosphere with an inert gas atmosphere occurs in the same treatment chamber as the coating and solvent volatilization occurs, therefore necessarily lowering the oxygen concentration in the chamber simultaneously with or before starting heating (therefore the temperature is still "low"). It is the Examiner's position that this inherently occurs since Nakano et al. teaches placing the substrate on a spin coater and does not teach movement of the substrate to another treatment chamber for drying or heat treating. Alternatively, it would have been obvious for one having ordinary skill in the art to have performed the step of supplying the inert atmosphere and heat treating in the same chamber as coating (therefore necessarily lowering the oxygen concentration when the temperature is still low, followed by heating in the inert atmosphere, and returning the chamber back to the original ambient air conditions so that the process can be performed again for the next substrate). It is additionally noted that Nakano et al. teaches at col. 6, lines 24-39, that the curing process in an inert atmosphere causes the film to not be oxidized.

As to claims 3 and 6-8, Nakano et al. inherently returns the treatment atmosphere to that of ambient air, or the original oxygen concentration, in order to then process other subsequent substrates in the same chamber. It is the Examiner's position that as the heat and inert

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atmosphere are both shut off, there will necessarily be a period of time before the original oxygen concentration is reached again, as well as the ambient temperature. Therefore, the original oxygen concentration will be achieved when the temperature of the substrate is lower than a predetermined value. As to claim 4, it is noted that Nakano et al. teaches an organic coating solution (see col. 3).

***Claim Rejections - 35 USC § 103***

8. Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapczyk or Morita et al.

Knapczyk and Morita et al. teach placing coated substrates in a heated inert atmosphere of nitrogen as discussed above. While the references specifically lack a teaching that the initiation of the inert atmosphere is started before or simultaneous with heating of the atmosphere in the treatment chamber (instead of just placing in an atmosphere which is already heated and inert), it is the Examiner's position that it would have been obvious for one having ordinary skill in the art to have individually, for each substrate, started providing inert gas in the atmosphere and started heating, with the expectation of similar results since the same process is being performed, but also with an expected loss of efficiency since a new heated, inert atmosphere is generated for each new substrate individually instead of maintaining an inert, heated atmosphere.

Performing the stated process would have necessarily performed the claimed steps of lowering the oxygen concentration when the temperature is "low," heat treating the substrate in the low oxygen concentration atmosphere, and returning the atmosphere to its original oxygen concentration after completing the heat treatment in order to process the next coated substrate.

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Claims 3 and 6-8 are rejected for the same reasons discussed in paragraph 7 above. It is noted that both Knapczyk and Morita et al. teach using organic coating solutions.

While Knapczyk and Morita et al. do not teach that the coating solutions oxidize at high temperatures, it is noted that the limitation of oxidation at high temperatures only occurs in the preamble. The preamble is not a limitation on the claims if it merely states the purpose or intended use, and the remainder of the claim completely defines the invention independent of the preamble. *Stewart-Warner Corp. v. City of Pontiac, Mich.* 219 USPQ 1162; *Marston v. J.C. Penny Co., Inc.* 148 USPQ 25; and *Kropa v. Robie and Mahlman*, 88 USPQ 478.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten Crockford Jolley whose telephone number is 703-306-5461. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

  
SHIRLEY P. BECK  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 1700

*KCJ*  
kcj  
December 16, 2002